

External wall - awrhh07a-05

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

Performance rating

Fire protection performance REI from inside 60
 REI from outside 30
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$
 Classified by MA39
 Classified by HFA

Germany

F60 (from inside/from outside)
 Load $E_{d,fi}$ according to the German certification document
 Corresponding proof: manufacturer-specific

Thermal performance U 0.19 W/(m²K)
 Diffusion suitable

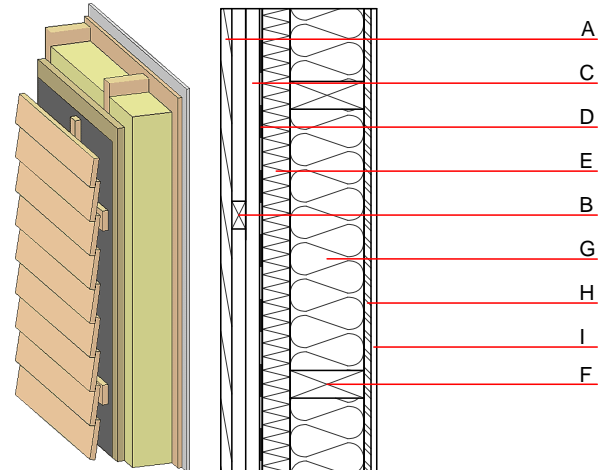
Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 46(-2;-8) dB
 $L_{n,w} (C_i)$

Assessed by MA39
 Assessed by Müller-BBM

Mass per unit area m 56.40 kg/m²

Calculation based on gypsum plaster board type DF



Note: According to OIB-RL 2 (Austria) is for ventilated and insulated facades (from building class 2) an insulation material with minimum Euroclass D required.

Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal performance				Reaction to fire EN
			λ	μ min – max	ρ	c	
A	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens - ventilation	0.120	50	450	1.600	D
C	30.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier			1000		
E	60.0	wood-fibre insulation board [045; 140]	0.045	2 - 5	140	2.100	E
F	160.0	construction timber (60/.,; e=625)	0.120	50	450	1.600	D
G	160.0	mineral wool [040; 33; $\geq 1000^\circ\text{C}$]	0.040	1	33	1.030	A1
H	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

$O13_{kon}$ 30.0

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 44.330
 Biogenic carbon in kg CO₂-e. kg CO₂ 65.110
 Energy use of Primary Energy MJ 615.000
 Share of renewable PE % 33.53

Calculated by TUM

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.153	0.057	2,02E-6	0.049	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	118.405	656.751	775.156	429.222	29.328	458.550

Database GaBi (ÖKOBAUDAT)

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.103	0.017	7,52E-7	0.022	
C1 - C4		0.002	0.002	7,54E-8	0.000	
A1 - C4		0.107	0.020	8,36E-7	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	204.731	684.998	889.480	389.112	51.569	440.750
C1 - C4	1.064	-679.038	-677.974	13.639	-17.012	-3.370
A1 - C4	206.180	6.219	212.150	408.815	34.609	443.500